

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (currently amended) An isolated *Piscirickettsia salmonis* 45 Kda (^{Ps}p45) protein or recombinant polypeptide comprising ~~an amino acid sequence selected from the group consisting of:~~
 - (a) ~~the amino acid sequence of SEQ ID NO: 2 or SEQ ID NO: 4 and~~
 - (b) ~~the amino acid sequence of SEQ ID NO: 2 or SEQ ID NO: 4 comprising~~ at least one conservative amino acid substitution.
2. (cancelled).
3. (cancelled).
4. (currently amended) The recombinant polypeptide of ~~Claim claim~~ 1 that is a chimeric protein.
5. (cancelled).
6. (currently amended) An isolated or recombinant nucleic acid encoding the isolated ^{Ps}p45 protein or recombinant polypeptide of ~~Claim claim~~ 1.
7. (currently amended) The nucleic acid of ~~Claim claim~~ 6 comprising a nucleotide sequence selected from the group consisting of SEQ ID NO:1 and SEQ ID NO:3.
8. (cancelled).
9. (currently amended) An expression vector, comprising the nucleic acid of ~~Claim claim~~ 7, and a transcriptional control sequence, wherein the nucleic acid is operatively linked to the transcriptional control sequence.

10. (currently amended) A host cell that comprises the expression vector of ~~Claim~~ claim 9.
11. (currently amended) A method for producing a ^{Ps}p45 recombinant polypeptide comprising culturing the host cell of ~~Claim~~ claim 10 in a culture medium, wherein the host cell expresses the nucleic acid encoding the recombinant ^{Ps}p45 polypeptide; and whereby the recombinant ^{Ps}p45 polypeptide is produced.
12. (currently amended) The method of ~~Claim~~ claim 11 wherein the host cell is an *E. coli* cell.
13. (currently amended) A method of obtaining a purified recombinant ^{Ps}p45 polypeptide comprising purifying the recombinant polypeptide produced by the method of ~~Claim~~ claim 12 from the culture medium.
14. (currently amended) The purified recombinant ^{Ps}p45 polypeptide obtained by the method of ~~Claim~~ claim 13.
15. (currently amended) A recombinant *Yersinia ruckeri* cell comprising the expression vector of ~~Claim~~ claim 9.
16. (currently amended) The recombinant *Yersinia ruckeri* cell of ~~Claim~~ claim 15 that has the BCCM accession No. of LMG P-22044.
17. (cancelled).
18. (currently amended) A vaccine that comprises the isolated ^{Ps}p45 protein or recombinant ^{Ps}p45 polypeptide of ~~Claim~~ claim 1.
19. (currently amended) A vaccine that comprises the nucleic acid of ~~Claim~~ claim 6.

20. (currently amended) A vaccine comprising the recombinant *Yersinia ruckeri* cell of ~~Claim~~ claim 15.
21. (currently amended) The vaccine of ~~Claim~~ claim 20, wherein said recombinant *Yersinia ruckeri* cell is a bacterin.
22. (currently amended) A vaccine comprising the recombinant *Yersinia ruckeri* cell of ~~Claim 17~~ claim 16.
23. (currently amended) The vaccine of ~~Claim~~ claim 22, wherein said recombinant *Yersinia ruckeri* cell is a bacterin.
24. (cancelled).
25. (currently amended) The vaccine of any of ~~Claim claims 18-24~~ 18-23, 45, 49 or 50 or 45 further comprising an antigen obtained from an Infectious Pancreatic Necrosis (IPN) virus.
26. (currently amended) The vaccine of ~~Claim~~ claim 25 wherein the antigen obtained from the IPN virus is selected from the group consisting of the VP2 var protein and the VP3 protein.
27. (currently amended) The vaccine of ~~any of Claim claim 25 18-24 or 45 further wherein the IPN antigen is comprising~~ comprises both the VP2 var protein and the VP3 protein from Infectious Pancreatic Necrosis (IPN) virus.
28. (cancelled).
29. (cancelled)

30. (currently amended) The vaccine of ~~any of Claim claim 25 18-24 or 45~~ that further comprises an antigen obtained from *Aeromonas salmonicida*.
31. (currently amended) A method of protecting a fish from salmonid rickettsial septicemia comprising administering to the fish the vaccine of any of ~~Claim claims 18-23, 45, 49 or 50 18-24 or 45~~.
32. (currently amended) The method of ~~Claim claim~~ 31 wherein the fish is a teleost.
33. (currently amended) The method of ~~Claim claim~~ 32 wherein the teleost is a salmonid.
34. (currently amended) A method of protecting a fish from salmonid rickettsial septicemia and Infectious Pancreatic Necrosis comprising administering to the fish the vaccine of ~~any of Claim claim 25 18-24 or 45~~.
35. (currently amended) The method of ~~Claim claim~~ 34 wherein the fish is a salmonid.
36. (currently amended) The method of ~~Claim claim~~ 33 wherein the salmonid is selected from the group consisting of a *Salmo salar* (Atlantic salmon), an *Oncorhynchus kisutch* (coho salmon) and an *Oncorhynchus mykiss* (rainbow trout).
37. (cancelled).
38. (cancelled).
39. (cancelled).
40. (cancelled).
41. (cancelled).
42. (cancelled).
43. (cancelled)
44. (currently amended) The method of ~~Claim claim~~ 35 wherein the salmonid is selected

from the group consisting of a *Salmo salar* (Atlantic salmon), an *Oncorhynchus kisutch* (coho salmon) and an *Oncorhynchus mykiss* (rainbow trout).

45. (currently amended) A vaccine comprising the recombinant *Yersinia rucker* of ~~Claim~~ claim 16.

46. (new) The isolated *Piscirickettsia salmonis* 45 Kda (^{Ps}p45) protein or recombinant polypeptide of claim 1 comprising the amino acid sequence of SEQ ID NO: 2 or SEQ ID NO: 4.

47. (new) An isolated or recombinant nucleic acid encoding the isolated ^{Ps}p45 protein or recombinant polypeptide of claim 46.

48. (new) An expression vector, comprising the nucleic acid of claim 47, and a transcriptional control sequence, wherein the nucleic acid is operatively linked to the transcriptional control sequence.

49. (new) A vaccine that comprises the expression vector of claim 9.

50. (new) A vaccine that comprises the expression vector of claim 48.

51. (new) The isolated ^{Ps}p45 protein or recombinant polypeptide of claim 1 wherein the ^{Ps}p45 protein has at least 95% identity with the amino acid sequence of SEQ ID NO: 2 and/or SEQ ID NO: 4.

52. (new) An isolated or recombinant nucleic acid encoding the isolated ^{Ps}p45 protein or recombinant polypeptide of claim 51.

53. (new) An expression vector, comprising the nucleic acid of claim 52, and a transcriptional control sequence, wherein the nucleic acid is operatively linked to the transcriptional control sequence.

54. (new) A vaccine that comprises the expression vector of claim 53.
55. (new) An isolated *Piscirickettsia salmonis* 45 Kda (^{Ps}p45) protein or recombinant polypeptide comprising the amino acid sequence of SEQ ID NO: 2 or SEQ ID NO: 4, wherein the ^{Ps}p45 protein has at least 95% identity with the amino acid sequence of SEQ ID NO: 2 and/or SEQ ID NO: 4.
56. (new) An isolated or recombinant nucleic acid encoding the isolated ^{Ps}p45 protein or recombinant polypeptide of claim 55.
57. (new) An expression vector, comprising the nucleic acid of claim 56, and a transcriptional control sequence, wherein the nucleic acid is operatively linked to the transcriptional control sequence.
58. (new) A vaccine that comprises the expression vector of claim 57.